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Growth Through Agricultural Progress

HOME FOOD PRODUCTION: PART II LIVESTOCK PRODUCTS AND HISTORICAL CHANGES AND FUTURE PROSPECTS

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HOME FOOD PRODUCTION: PART II
LIVESTOCK PRODUCTS AND HISTORICAL CHANGES
AND FUTURE PROSPECTS

This second article on home food production begins with a description and analysis of spring 1955 and annual 1954 data from the 1955 Survey of Household Food Consumption pertaining to production of livestock products for home use. 2/ The next section of the article discusses historical changes in home production of food, using both AMS supply and utilization data and household survey data. The article concludes with consideration of prospective changes in the competition between home-produced foods and commercially marketed supplies.

Major findings of the article are as follows:

1. North central farm households produced more of their own meat and poultry in the spring of 1955 than did households in other regions. The South was particularly high in milk and butter production for household use. Both regions produced a large proportion of the eggs they used.
2. Nonfarm households in the South still produce substantial quantities of livestock products, especially poultry and eggs. In the United States as a whole, 17 percent of the rural nonfarm households produced eggs and poultry, and between 6 and 8 percent produced milk and meat in 1954.
3. In the spring of 1955 the value of farm home-produced livestock products per person rose only about 20 percent with income over the range from the "under \$1,000" family income group to the "over \$10,000" group. Increases in purchased livestock products were substantially greater. Purchases exceeded home production at the highest income level.
4. Farm households with freezing facilities produced two to three times as much meat per person in 1954 for home use as households of comparable income but without freezing facilities.
5. Farmers' sales of food commodities and retailers' food sales in 1955 were about a tenth higher than would have been the case if families had home produced the same proportion of their food as in 1942.

1/ By Marguerite C. Burk and Gertrude Gronbeck, Statistical and Historical Research Branch, AMS. Part I in this series was published in the April 1958 issue of The National Food Situation. It contained (1) a review of 1955 variations in the importance of home food production, (2) a discussion of who produced food for home use and why, and (3) a description and analysis of 1954 and spring 1955 data on home production of vegetables, potatoes and sweetpotatoes, fruits and melons. 2/ Spring 1955 data given in the 1955 Household Food Consumption Reports 1-5 and the 1954 data in Report 12, Food Production for Home Use by Households in the United States -- by Region, (January 1958).

6. With increasing urbanization and higher incomes, it is quite possible that the proportion of all U. S. food home produced may decline from the present 8 percent to 2 or 3 percent in the next 20 years. This shift will continue to be a significant element in food marketing changes.

Patterns and Significance of Home Production
of Livestock Products in Spring 1955

In the spring of 1955 households in the United States purchased 87 percent of all the livestock products they used at home, including meat, poultry, and eggs, and dairy products. This proportion varied from about 40 percent in farm households to 97 percent in urban households. Rural nonfarm households purchased about 86 percent.

As urban households produce relatively little livestock, this section will be confined to rural households.

Rural nonfarm households had produced about 8 percent of the total value of livestock products that they used in spring 1955. In this group of households home production was far more significant in the South than elsewhere--it provided substantial proportions of their milk, butter, and eggs. In both the South and the North Central Region rural nonfarm households had bought about 90 percent of their meat and had produced only 6 percent. The balance was received as gifts or pay.

In rural nonfarm households, average home production of all livestock products combined, on a per person basis, decreased markedly from lower to higher income groups. Eggs followed this pattern. Home production of milk tended downward, but variations with income were slightly erratic. The spring data on consumption of all home-produced meat showed no clear relationships with income; but there is evidence that production of beef and veal for rural nonfarm home use did vary directly with income. Indications of a decrease in home production of poultry at successively higher levels of income are present, but the pattern is rather irregular.

Farm Home Production
and Purchases

Farm households produced 57 percent of the livestock products they used at home, bought 40 percent, and received 3 percent as gifts or as pay. Close to half of the meat, butter, and lard used by U. S. farm households in spring 1955 had been purchased, but only a third of the dairy products other than butter, a fourth of the poultry, and a fifth of the eggs. The converse of this purchase picture is the degree of emphasis of farm households on home-produced livestock products. Analysis of available sets of data leads to the conclusions (1) that farm households producing milk, poultry, and eggs for their own use buy only a small quantity of these products, but (2) that farm households producing meat for their own use supplement home production with purchased meat.

The relative importance of purchased and home-produced supplies varied from region to region. Farm households in the South and the North Central Region relied more on home-produced livestock commodities than did those in the Northeast and the West. However, the actual value of home-produced supplies as well as all livestock products consumed per household was lower in the South than in the other three regions.

North central farm households produced more of their own meat and poultry than did those in other regions. In the South, high production of milk and butter is indicated. Households in these two regions also produced a larger proportion of the eggs they used than did households in the West and the Northeast. The small proportion home churning in the North Central Region was tied in with the practice of selling cream to cooperative creameries and buying butter at butterfat prices.

Relationships between purchases and home production at successively higher levels of income provide some clues as to future competition between the two sources of food. In the spring of 1955, purchases supplied a third of the value of livestock products consumed by farm households with money incomes below \$2,000 (after income taxes). Most of the other two-thirds came from home production. The value of home-produced livestock products per person rose only about 20 percent with income, but purchases increased substantially at successively higher levels of income. In general, farm households in each of the regions followed the same pattern. Among high-income households in the Northeast and the West, however, home production of livestock commodities per person tended to decrease slightly rather than increase with income.

Home production supplied half to two-thirds of the beef consumed by farm households with incomes below \$8,000. Above that point, relationships were irregular, probably because of the small number of cases reported. At all income levels, a smaller proportion of pork than beef consumed during the spring months came from home production. Consumption of home-produced pork ran below beef except among the third of the farm households that had money incomes below \$2,000, preponderantly in the South.

Although home-produced milk declined gradually across the income scale, it was a more significant source of dairy products (except butter) than purchases in all income groups of U. S. farm households except the highest. Purchases of these foods rose more sharply with income than home production fell.

Purchases of eggs per person rose slightly, and home production dropped slightly, from the lower to the higher income groups. Among all income groups, purchased supplies were much below home production. The variation among income groups was greater in the Northeast than in the South and in the North Central Region.

Home Production of Livestock Products in 1954

The 1955 Survey of Household Food Consumption provided a considerable array of data on home production of livestock products in the calendar year 1954. Analysts can supplement the 1955 spring season data with these 1954 data.

Variations in Proportions of Households Home Producing

In 1954, almost a fifth of the households in the United States had some home-produced livestock products. The proportion varied much more according to the degree of urbanization than by region (table 8). Regional differences were much less among farm than nonfarm households.

Table 8.--Proportion of households having home-produced livestock products, by region and urbanization, 1954 ^{1/}

Region	All urbani- zations	Farm	Rural nonfarm	Urban
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
United States	18	92	23	3
South	32	92	37	9
North Central	17	92	16	1
West	12	88	17	2
Northeast	7	96	13	1

^{1/} From table 2, 1955 Household Food Consumption Survey Report 12, Food Production for Home Use by Households in the United States--by Region.

More households had home-produced eggs and poultry than milk and meat (table 9). This was the case in each urbanization group in each region.

Table 9.--Proportion of households having specified home-produced livestock products, by urbanization, 1954 ^{1/}

Livestock product	All urbanizations	Farm	Rural nonfarm	Urban
	Percent	Percent	Percent	Percent
Any	18	92	23	3.1
Eggs	15	79	17	2.3
Poultry	14	74	17	2.2
Milk	10	69	6	.5
Meat	10	66	8	.7
Pork	7	50	6	.5
Beef	6	45	3	.4

^{1/} From table 2, 1955 Household Food Consumption Survey Report 12, Food Production for Home Use by Households in the United States--by Region.

In each urbanization group in the South a much higher proportion of the households had home-produced pork than beef. The converse held in the West. Rural nonfarm households in the north central and northeastern regions resembled those in the South in that more of them had home-produced pork than beef.

Variations in Quantities Home-Produced

In 1954, home production of livestock products in housekeeping households amounted to 14 pounds of meat per person, 6 pounds of poultry, 7 dozen eggs, and 42 quarts of milk. Quantities produced varied greatly by degree of urbanization. Urban households produced on the average only a pound of meat per person, 3/4 pound of poultry, a dozen eggs, about 2 quarts of milk. Comparable data for farm households were 83 pounds of meat, 30 pounds of poultry, 33 dozen eggs, and 246 quarts of milk.

As data in table 12 show, home production of livestock products by rural nonfarm households was, of course, much less than such production by households operating farms. However, the rural nonfarm averages came closest to farm production in poultry and eggs, because this enterprise can be more of a backyard operation than keeping a cow to milk, or raising pigs or cattle.

Nonfarm households in the South produced on the average much more milk, eggs, poultry, and meat for household use than those in other regions. A higher proportion of nonfarm households in the South had such enterprises than did those in other regions. This is probably related to the lesser degree of urbanization in the South. Southern households producing milk produced larger quantities than this category of households did in other regions. This is probably affected by the practice of home churning, larger household size, higher price and relatively smaller market supplies.

Farm Home Output of Livestock
Products in 1954

Farm households in 1954 produced for their own use almost three times as much meat as poultry. They averaged 342 pounds of meat, -- or over 6 1/2 pounds a week. Slightly over half of this was pork. The South ranked first in the home production of pork. Production in the West was much below that in other regions. The reverse was true for beef and veal. For all meats combined, the South dropped to fourth place, and the West to third. The North Central Region ranked first, with a pound a week above the national average per farm household.

Production of poultry and eggs for farm use averaged 122 pounds of poultry and 136 dozen eggs in 1954. On a weekly basis, these quantities amounted to 2 1/3 pounds of poultry and over 2 1/2 dozen eggs a week. The North Central Region ranked first in the average quantity of home-produced poultry per household; the South was a close second. Eggs were just the other way round--for both poultry and eggs the West ranked last. Western farm households produced almost as much chicken for their own use as did those in the Northeast. But production of poultry other than chicken averaged more than twice as much in the Northeast as in any other region.

Farm households produced an average of a thousand quarts of milk for their own use, including that used in making butter and cheese. The average for southern farm households (1150 quarts) was greater than that produced in the other regions (about 900 quarts). The proportion of farm households in the South (58 percent) that churned butter for their own use was nearly three times as great as that in the rest of the country. Farm households producing milk for their own use rather than for sale are more likely to make butter if it is difficult to find a market for small surpluses, usually the case outside areas of commercial production. In the North Central Region it is common practice to sell cream and buy butter, at no cost for the churning. The practice contributes to the low proportion of households that churn butter for their own use in that region.

Variations in Value of
Home-Produced Output

Variations in the value of livestock commodities produced for household use in general follow those of the quantities. Value data provide the only way of combining all livestock products. Those for 1954 are summarized in table 10.

Table 10.--Average value of livestock products produced for home use by households in the United States, by region and urbanization, 1954 ^{1/}

Region	All urbanizations	Farm	Rural nonfarm	Urban
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
United States	69	450	2/57	6
South	126	480	2/110	18
North Central	65	418	27	1
West	40	402	38	4
Northeast	23	466	18	1

^{1/} From table 2, 1955 Household Food Consumption Survey Report 12, Food Production for Home Use by Households in the United States--by Region.

^{2/} Corrected data. (See errata at end of article.)

The South ranked first in each urbanization category in the value of home-produced livestock products per household for the year 1954, but in the spring of 1955 southern farmers used less of such home-produced foods than others. In the case of home-produced milk and meat, southern farm households, compared with those in other regions, used relatively less in spring than on an annual basis.

Although farm households comprised only 11 percent of all households, they accounted for 72 percent of the aggregate value of all home-produced livestock products. This compares with 42 percent for vegetables and fruits.

Fewer households in the United States produced milk and meat than eggs and poultry, but the average value per household of the milk and meat was greater. This was the case also among the farm households, but among nonfarm households the average value of the eggs per household was greater than that of meat.

The average value of each home-produced livestock product per household producing the item varied much less by urbanization than the averages based on all households, as indicated by data in tables 10 and 11.

Table 11.--Average value of specified home-produced livestock products per household producing the item, by urbanization, 1954 1/

Livestock product	All urbanizations	Farm	Rural nonfarm	Urban
	Dollars	Dollars	Dollars	Dollars
Total	373	489	245	179
Milk	324	309	405	2/268
Meat	184	196	145	189
Eggs	69	69	66	74
Poultry	61	71	47	55

1/ Derived by dividing the value data by the percentage data in table 2, Report 12.

2/ Based on only 13 households.

Certain supply characteristics minimize variations in the average quantities for households producing a specified livestock commodity. For the household producing milk or eggs it is practical to produce the major part or all of its supply. The minimum supply of milk -- that from one cow -- is likely to be a fairly generous supply of milk for a household for a good part of the year, unless households share. Home-produced meat as a minimum is the meat from one meat animal, although some may be given away or sold. The average value per household varied less by urbanization for these products than for poultry, for which the scale of operations is much more flexible.

Relationships Between Income and Home Production

Production of livestock products by rural nonfarm households for their own use generally declines at successively higher levels of income. But there are some variations from the general pattern. Average home production of meats by rural nonfarm households actually increased from the lowest income class (under \$1,000) up to the \$3,000 income point, then began to decline -- though with some irregularities in the highest income brackets. Poultry, eggs, and milk conformed to the general pattern for all livestock products combined.

The most significant finding deduced from the regional data for the activity of rural nonfarm households along this line was that those in the South did more home producing of all livestock commodities at all income levels than households in other regions.

The average quantity of meat produced for home use by farm households in the United States in 1954 increased gradually and fairly steadily from about 80 pounds per person in households with annual money incomes under \$2,000 (after income taxes), to about 100 pounds in households with incomes of \$8,000 to \$10,000. But the average per person in households with incomes

over \$10,000 was less than in any other income group. The quantity of beef and veal per person followed the general pattern for all meat, but the increase from the lower to the higher income levels was sharper. The quantity of pork per person fell almost 50 percent from the lowest to the highest income groups. Home production of pork averaged about 50 percent higher than beef and veal in households with incomes under \$2,000, about the same as beef and veal in the middle income groups, and from a half to two-thirds as much in the higher income groups.

The regions varied in the relationship between levels of income and home production of meat per person. The variation in home meat production among income groups was least in the North Central Region. The average quantity of pork per person decreased from the lower to the higher income groups, and the quantity of beef increased. However, the difference between the average quantities of beef and pork was much less in the North Central Region than in the whole country, particularly at the lower income levels. The average quantity of each was above the U. S. average.

In the Northeast the average quantity per person of home-produced meat rose more sharply in the lower range of income and also dropped more sharply at the higher income levels than it did in the United States as a whole. Pork and beef followed much the same pattern, the quantity of pork dropping more at the highest income level. For all income groups the quantity of beef and veal home produced was greater than that of pork.

Southern farm households stepped up the quantity of meat per person produced for home use gradually from the lower to the higher income groups. Both beef and pork followed this pattern with greater increases in beef.

The West was a contrast to the South. The quantity of all home-produced meat and of beef per person decreased gradually as the income level rose. But pork production increased slightly with income.

Home production of poultry and eggs per person by farm households generally decreased from lower to higher income groups. The level of home production of poultry was significantly higher in the North Central Region for each income group than in other regions. Except for the lowest income group, the South's averages for eggs came close to those of north central farm households.

Milk output for farm home use decreased more sharply at successively higher levels of income than any other livestock product. The level of home production in the South was much higher than the level of home production in other regions, but the relationship to income in the South showed the greatest decrease with higher income of any of the regions.

Relationship of Household Size to Home Production

Household size influences home production of livestock commodities in two ways: (1) Whether the households produce these commodities for home use, and (2) how much they produce. This analysis is limited to farm households.

A significantly smaller proportion of 2-person households at all income levels produced meat than did larger households. In the middle range of income, the larger the household size, the larger the proportion home producing meat. The pattern for high income households was irregular.

In households with money incomes of less than \$4,000 the number of people in the household beyond two apparently had no definite relationship to whether chickens were kept for eggs, probably because size of flocks can be directly suited to household needs. At the \$4-6,000 income level, household size appeared to influence the proportion home producing eggs. At higher income levels, no clear relationship appeared. Larger households tended to go in more for home production of poultry meat than did smaller ones. But the 2-person households found it relatively more worthwhile to produce poultry than meat for their own use, probably because poultry can be slaughtered as used. Meat production is a bigger operation.

Keeping cows to supply household needs for milk was clearly related to household size at all income levels. Households not producing milk for sale probably do not find it practical or worth the trouble to keep and milk a cow twice a day unless the household is large enough to use most of the milk produced.

The survey data for 1954 reveal fairly direct relationships between (1) household size and (2) the quantities of meat, milk, and eggs produced for home use at (3) each income level. In the case of meat, for each household size the higher the income level, the larger the quantity home produced by farm households. There appeared to be a general tendency for larger households to produce more poultry meat. The observed variations from this general pattern might be related to home production of meat. Data are not yet available to explore this problem.

Relationship Between Freezing Facilities and Home Production of Meat

Home production of meat by farm households is greatly affected by the availability of freezing facilities. In 1954, almost two-thirds of the farm households had facilities for freezing food. Those with such facilities accounted for somewhat more than 80 percent of the meat produced by households for their own use. Not only did a higher proportion of households with facilities for freezing food have home-produced meat, but they averaged more per household than those without freezing facilities.

The differences between farm households with and without freezing facilities was greater for meat than for poultry, both in the proportion having home-produced meat and in the average quantities produced per household. Only 44 percent of those without freezing facilities had home-produced meat, whereas about 80 percent of those with freezing facilities did. For poultry, the proportion differed only between 70 and 77 percent. The average quantity of home-produced meat per farm household was 178 pounds in households without freezing facilities, 456 pounds in those with home freezers, and 407 pounds in those with rented lockers only. The corresponding averages for poultry were 96, 142, and 130 pounds, respectively.

The average quantity of home-produced meat per household having the item varied less between households with and without freezing facilities than the averages based on all households. The average quantity per household having home-produced meat was 403 pounds in households without freezing facilities, 580 pounds in those with home freezers, and 490 pounds in those depending on rented lockers only.

These overall relationships between freezing facilities and home meat production are affected to some extent by the fact that higher income and larger households tend to have freezing facilities. But special tabulations of the survey data permit comparisons of home production of meat on a per person basis for households with and without freezing facilities by income groups. At each income level up to \$6,000, the quantity of meat home produced per person in farm households with access to freezing facilities was almost 3 times the average for those without. Among farm households with money income above \$6,000, the average was 2.2 times as large.

Fifty percent of the farm households in the South without facilities for freezing food had home-produced meat, but only 7 percent of comparable households in the West. Many more southern households produced pork than beef. The opposite pattern held in the West. Home production of pork is not as dependent on freezing facilities as that of beef.

Historical Changes in Home Food Production

The overall extent of the decline in home food production from 1941 to 1955 can be measured at the farm level with AMS data on supply and utilization of farm food commodities 3/ and at the retail level with data from the 1942 Survey of Family Spending and Saving 4/ and the 1955 Survey of Household Food Consumption.

3/ Using data from the Supplement for 1956 to Agr. Handb. 62 Consumption of Food in the United States and unpublished Crop Reporting Board data.

4/ Spring 1942 data reported in U. S. Dept. Agr. Misc. Pub. 550 Family Food Consumption in the United States, Spring 1942; annual data for 1941 given in U. S. Dept. Agr. Misc. Pub. 520 Rural Family Spending and Saving in Wartime.

Using AMS Time-Series Data

Separation of consumption of home-produced foods from consumption of food sold by farmers, and valuation of such consumption in terms of farm prices in 1947-49, show that the proportion of home-produced food in total civilian food consumption declined from 17 percent in 1941 to 9 percent in 1955. For livestock products the proportion fell from 18 to 9 percent, for crops from 14 to 7 percent.

The following tabulation indicates the changing significance of home-produced supplies included in AMS estimates of civilian consumption of a number of major foods from 1941 to 1954, the years of the nationwide household food surveys which covered home production:

<u>Commodity</u>	<u>Percentage of total civilian consumption</u>	
	<u>1941</u>	<u>1954</u>
Beef and veal*	2	2
Pork*	15	9
Chicken	32	18
Eggs	30	20
Milk (including farm butter and cheese)	21	11
Vegetables, fresh	50	42
Potatoes	25	12
Melons	38	22
Fruits and nuts*	6	7

*Includes only farm home production

Survey Data on Importance
of Home Food Production

Household food surveys of the U. S. Department of Agriculture collected data on the consumption and value of all food consumed at home and their sources in a week during spring in 1942 and 1955. 5/ Key facts from these surveys for this analysis are: (1) The average retail or market value of all food consumed at home per person went up about 12 percent from spring 1942 to spring 1955, in 1955 prices. The rural nonfarm average increased substantially more than the urban or farm average. (2) Food expenditures for home consumption by rural nonfarm and farm people rose significantly more than the increase in the retail value of all food used at home. (3) The average proportion of the retail value of all food used at home, that had been home produced, dropped from 18 to 8 percent.

5/ Separate data on how much of the food consumed at home had been purchased were not tabulated for spring 1942, but quantities from all sources less home-produced probably come within 1 or 2 percent of purchases (judging from 1955 data). Therefore, analyses of changes in the competition between home production and commercially produced and marketed supplies are possible.

Lacking 1942 data on home food production by urban households, we have assumed for these computations that it was only fractionally higher than the 1 percent of all urban food at home in spring 1955, which had been home produced. The home-produced proportion of food at home in rural nonfarm households in a week of spring dropped from 22 to 8 percent; for farm households it dropped 61 to 41 percent.

Home food production by farm and rural nonfarm households declined both relatively and absolutely--more for the latter. These decreases were general at all income levels within both groups. Most of the cutback was in livestock products. Average consumption of livestock products per person in farm households increased somewhat, but purchases almost doubled. Home production supplied 78 percent of livestock products consumed in farm homes in spring 1942, but only 57 percent in spring 1955. Much of the decline was in dairy products, including butter.

Total use of livestock products by rural nonfarm households also showed some increase. Purchases were half again as large and the proportion home produced dropped from 27 to 8 percent. The reduction of home producing efforts affected all commodities.

For fruits and vegetables there was no major change in the overall level of consumption per person, but there was a marked shift from home-produced to purchased supplies. Between 1942 and 1955, the proportion of fruits and vegetables consumed in a week of spring that had been home produced by farm households fell from 58 to 37 percent; for rural nonfarm households reduction was from 26 to 14 percent.

Home production of sugars, sirups, and cereal products by farm households also decreased, falling to relatively insignificant levels.

In the foregoing analysis it has been necessary to use spring survey data in order to show the relative significance of home production to all consumption at home. But use of spring data on home production raises the problem of seasonality. For this and other reasons, in both the 1942 and 1955 surveys, data on home production in the preceding year were collected. The 1954 data have been described in preceding sections of this article and the article in the April issue of The National Food Situation. A few statistics are repeated here for comparison with available 1941 data.

Livestock Products: 1941 and 1954 Survey Data

Quantities per person of major livestock products produced by all American households for home consumption in 1941 and 1954, using rounded figures from the household survey were: All meat - 15 pounds in 1941, 14 pounds in 1954; poultry - 8 and 6 pounds, respectively; eggs - 10 and 7 dozen; milk - 121 and 42 quarts. Data on urban home production in 1954 were substituted for missing urban figures for 1941 in deriving these U. S. averages, although the 1941 urban averages may have been slightly higher.

In table 12 we give the essence of changes in home production of livestock by rural nonfarm and farm households in the last 15 to 20 years. The proportion of rural nonfarm people producing livestock for their own use was halved; it is reflected directly in the average quantities produced per person, except in the case of poultry. For livestock products other than poultry, the quantities home produced per household home producing stayed about the same.

Production of beef and veal for family use by farm households increased markedly. This rise resulted directly from the increased availability of freezing facilities. Poultry and egg production for family use changed little, but milk production was halved. The greater decline in average quantity of milk produced than in proportion of households milking cows for family use probably is tied in with decreased farm butter production.

Table 12.--Average quantities per person of selected items home produced and proportions of households home producing,
U. S. farm and rural nonfarm households,
1941 and 1954 ^{1/}

Urbanization and item	Quantity home produced per person			Proportion home producing item	
	Unit	1941	1954	1941	1954
				Percent	Percent
Farm					
All meat, dressed weight	Lb.	60	83	3/	66
Beef and veal	Lb.	14	39	16	45
Pork	Lb.	45	44	71	50
Poultry, drawn weight	Lb.	28	30	88	74
Eggs	Doz.	32	33	92	79
Milk ^{2/}	Qt.	456	246	89	69
Rural nonfarm					
All meat, dressed weight	Lb.	13	8	15	8
Poultry, drawn weight	Lb.	7	5	30	17
Eggs	Doz.	12	6	35	17
Milk ^{2/}	Qt.	90	31	21	6

^{1/} Data for 1941 derived from Misc. Pub. 520 Rural Family Spending and Saving in Wartime; for 1954, from the 1955 Household Food Consumption Survey Report No. 12.

^{2/} Includes milk used in making butter and cheese.

^{3/} Not available.

Fruits and Vegetables: Survey Comparisons

Tracing of changes in overall fruit and vegetable production for home use is greatly impeded by (1) unsatisfactory prewar annual data on fresh use of home-produced foods and (2) the lack of information on what was canned by rural nonfarm households in 1941. Available data on home canning of vegetables and pickles by farm households show an average decrease of a fourth from 1941 to 1954, including a comparable decrease in quantities canned from home garden supplies. But this reduction in home canning was partly offset by home freezing. The making of jams and jellies was cut in half, as was the canning of fruits. The proportion of fruit canned by farm households which had been purchased was larger in 1954 than in 1941.

Despite the obvious problem of seasonality and the one-month difference in survey time period (April, May 1942 and April-June 1955), the data on sources of fruits and vegetables consumed in a spring week do indicate a substantial reduction in supplies from home production. The proportions coming from these supplies are summarized below:

<u>Item</u>	<u>Farm</u>		<u>Rural Nonfarm</u>	
	<u>Spring</u>	<u>Spring</u>	<u>Spring</u>	<u>Spring</u>
	<u>1942</u>	<u>1955</u>	<u>1942</u>	<u>1955</u>
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
Fresh and home-canned vegetables	78	59	50	25
Potatoes and sweetpotatoes	63	31	19	9
Fresh and home-canned fruits	46	28	23	12

Changes in Income-Home Production Relationships

An important key to prospects for further shifts from home-produced to commercially produced and marketed food supplies is the relationship between extent of home production and family income. The farm pattern of home production in relation to income level changed from a slight increase with income in dollar value of home-produced food in 1942, to one of little variation with income in 1955 (figure 1). The 1955 relationship between home food production and income of rural nonfarm households decreased much more consistently than in 1942 (figure 2).

These overall changes raise two significant questions: (1) Which foods were affected? (2) Why did they occur?

Whereas the value of both home-produced and purchased livestock products consumed by farm households in spring 1942 increased with income, in spring 1955 there was little variation in home-produced supplies. Purchased supplies increased less at successively higher levels of income in 1955 than in 1942. However, the general level of home production was lower and that of purchased supplies higher in spring 1955 than in the earlier year.

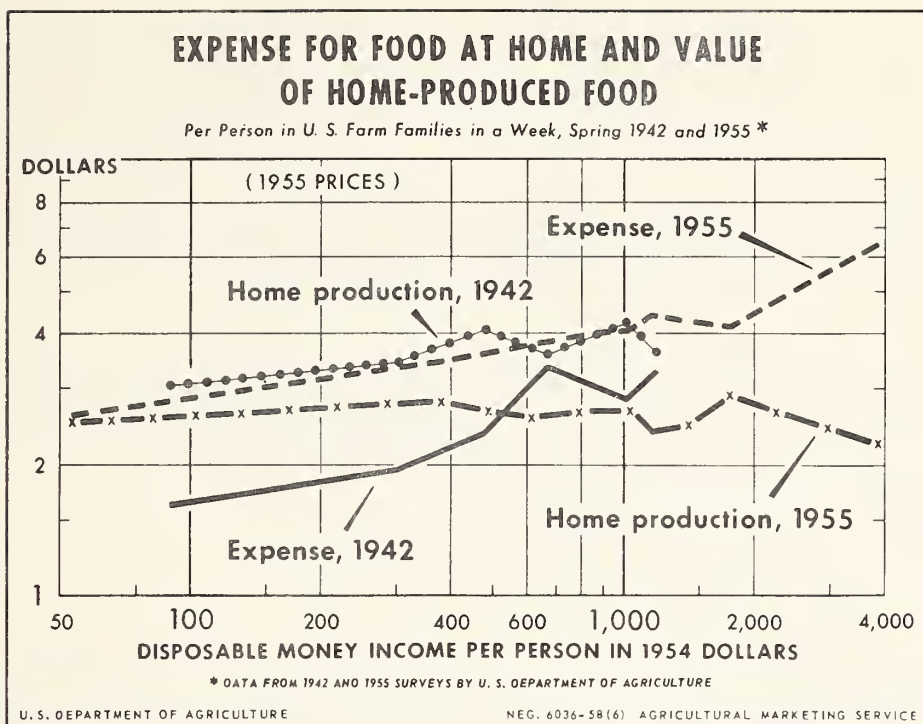


Figure 1.--Farm

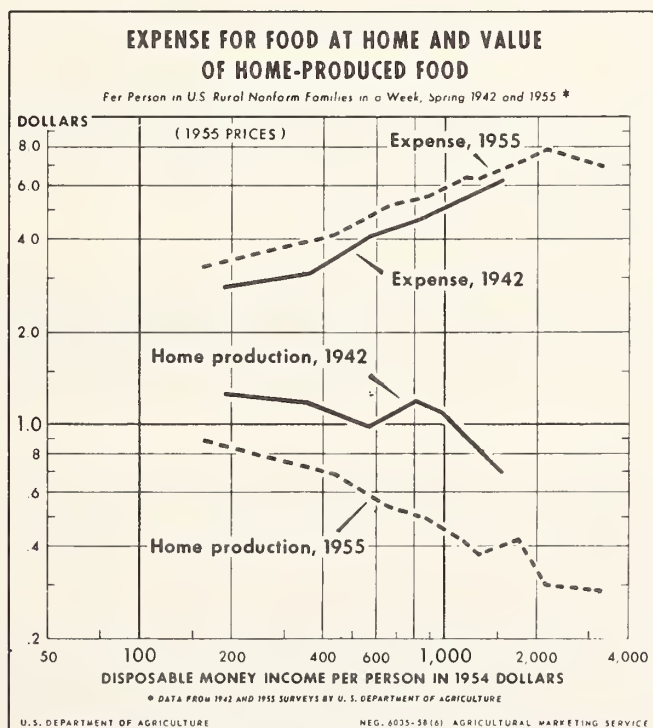


Figure 2.--Rural nonfarm

Making up these overall changes in livestock products for farm households were some contrary shifts for major items. Farmers in both the lower range of income and those with relatively high incomes produced more beef and veal for their own use in 1954 than in 1941. The only significant change in pork was the cutback by high income farmers. In 1941, production of milk for household use bore no clearcut relation to income; in 1954 there was a definite shift by higher income farm families to purchased rather than home-produced supplies. Likewise, a significantly smaller proportion of higher income farmers produced poultry and eggs for their own use in 1954 than in 1941.

The cutback in home production of livestock products by rural nonfarm households occurred for each type of product and at every income level. But the decrease in home production was much sharper at successively higher income levels in 1954 and spring 1955 than in the earlier period.

Purchases of fruits and vegetables by farm households were at a higher level in spring 1955 than in spring 1942 ^{6/} and showed a definite increase with income. Home-produced supplies varied conversely.

Rural nonfarm households at each real income level spent about the same amounts for fruits and vegetables in spring 1955 as in 1942, allowing for price changes. The general level of supplies from home production was somewhat lower, but these supplies varied about the same with income in the two years.

Why Has Home Food Production Declined?

The changes in U. S. home food production described in the preceding section resulted from (1) the smaller farm population and changes in its make-up; (2) increased incomes; (3) technological changes, such as freezing facilities; (4) improved marketing of food in rural areas; and (5) changes in ways that rural families choose to live and eat.

Consider first the net shift of between 7 and 8 percent of the U. S. population from the farm to the rural nonfarm category primarily, but some also to the urban category. That shift alone lowered the relative importance of home-produced foods in total food consumed at home from 18 percent to 14 percent. ^{7/}

Other factors affected the consumption patterns of farm and rural nonfarm households. Increases in real income alone could account for about half of the rise in average expenditures for food at home by rural nonfarm households

^{6/} Conclusions based on comparison of per person values of home-produced and not home-produced fruits and vegetables in terms of 1955 prices.

^{7/} Techniques used in deriving such estimates are described in a forthcoming article by the senior author in the August issue of the Journal of Farm Economics, "An Economic Appraisal of Changes in Rural Food Consumption."

and around 30 percent of the farm food expenditure increase. 7/ But the reduction in home food production by rural nonfarm households has been 10 times as great as their income-home food production relationships in 1942 indicated. Whereas such 1942 relationships for farm households led us to expect a 10 percent increase in home production, it actually declined 20 percent.

How much the changes in home food production of major commodities have exceeded expectations based on relationships to income is demonstrated by the data for livestock products in table 13. Only poultry and egg production for farm home use has followed indications at all closely.

Table 13.--Proportion of total actual change in average home production per person in rural population explained by estimated effect of change in income from 1941 or spring 1942 to 1954 or spring 1955 1/

Item	: Proportion measured using : 1941 or spring:1954 or spring : 1942 average : 1955 average : home production:home production : in each income:in each income : class weighted:class weighted : by 1954 income:by 1942 income- : size distribution:size distribution	
	Percent	Percent
A. <u>Rural nonfarm</u>		
1. In a week of spring, value of home-produced:		
a. Livestock products	13	15
b. Fruits and vegetables	8	15
2. Annual home production		
a. Meat	21	30
b. Poultry	26	48
c. Eggs	9	43
d. Milk	10	26
B. <u>Farm</u>		
1. In a week of spring, value of home-produced:		
a. Livestock products	2/	2/
b. Fruits and vegetables	2/	2/
2. Annual home production		
a. Meat	48	21
Beef and veal	23	19
b. Poultry	95	3/
c. Eggs	125	3/
d. Milk	1	6

1/ The rural population includes the housekeeping population in rural nonfarm and farm households. Rural nonfarm households are those outside urban areas (defined as communities of 2500 population or more and the suburbs of large cities) and not operating a farm. Farm households include only those operating a farm. 2/ Average home production decreased from spring 1942 to spring 1955 whereas income-home production relationships in both years indicated an increase with income. 3/ Average home production increased slightly whereas relationships to income in spring 1955 indicated a slight decrease.

Another possible factor in changes in home food production from one period to another is a basic change in the makeup of the population sampled. The only significant change found in the rural population was in the low-income groups of farm households. These groups included a much smaller proportion of cotton farmers in 1955 than in 1942. According to a 1948 survey, cotton farmers with incomes under \$1,000 home produced less than half as much food per person as tobacco and southern mountain farmers did. 8/ This factor had a lot to do with the change in the position of the lower end of the home production curve in figure 1.

The great increase in home production of beef and veal by farm families is primarily the result of technological developments in the forms of locker plants and home freezers. Although families have been storing food in locker plants for more than 40 years, most of the growth in the industry has occurred since 1949. Over 3 million families stored frozen food in lockers in 1954 and 2 million more used locker plant processing and merchandising services 9/.

In 1950 half of the farm families had locker space and 12 percent had freezers. By 1954, 46 percent of farm families either owned freezers or used someone else's, 18 percent used rented lockers only. Among rural nonfarm families, 20 percent had freezers and 7 percent relied on lockers.

The direct relationship between use of freezing facilities and extent of home production of meat in 1954 has already been described. At this point therefore we repeat only the fact that farm households with freezing facilities produced on the average 2 to 3 times as much meat per person in 1954 for home use as households of comparable income but without freezing facilities. It is evident that the widespread freezing of meat, primarily beef and veal, contributed greatly to the rise in average home production of meat by farm households from 1941 to 1954, while output of other items either held constant or declined.

Contributing to the decline in home production and the rise in food purchases were the increased accessibility to, and the use of, well-stocked food markets. Rural people are much more mobile now than formerly, owing to better roads, off-farm employment -- especially in urban areas -- and other changes in ways of living, such as school consolidation and mechanization of farms and farm households. Rural families at all income levels are using commercially processed foods much more extensively.

8/ Page 67, Family Food Consumption in Three Types of Farming Areas of the South. I. An Analysis of 1947 Food Data. Southern Coop. Ser. (Exp.) Bul. 7, June 1950.

9/ Wilkins, P. C., Mann, L. B., and Miner, B. D. Frozen Food Locker Plants: 1955 Survey. Utilization Research Report 1. Farmer Cooperative Service. May 1957.

Effects of Changes in Home Production on the
Commercial Market for Food at Home

The decline in average home food production by American households has contributed significantly to farmers' sales of food commodities. Analysis of AMS data on food supplies and civilian consumption in 1941 and in 1955 and measurement of changes in terms of 1947-49 farm prices lead to the conclusion that 9 percent of farm food sales in 1955 supplied foods that would have been home produced if 1941 relationships had held. For livestock products the comparable figure is 10 percent, for crops 7 percent. 10/

The same decrease in home food production accounted for about 11 percent of all retail food sold to housekeeping households for home consumption in spring 1955, 12 percent for livestock products, and 8 percent for fruits and vegetables. 11/

Future Prospects

Looking ahead, what is likely to happen to home food production? How much would possible further declines affect the demand for commercially produced and marketed foods?

Important factors affecting home food production will be (1) more people living closer together and (2) fewer people operating farms. One projection for 1975 indicates farm population may drop to 7 percent. 12/ With more crowding, the urban population might reach 75 percent, leaving 18 percent rural nonfarm. With no other changes than this shift in urbanization, home production would account for only 5 percent of food consumed at home.

10/ Calculated from the difference between AMS estimates of home production in 1955 and those estimated with 1941 percentage home-produced, using 1947-49 farm prices throughout.

11/ Estimated by applying the proportions home-produced in spring 1942 to reported value of food at home per person in spring 1955, subtracting actual home production in spring 1955, and comparing result with value of purchased food.

12/ In "The Farm Population and the Agricultural Labor Force in 1975," Applications of Demography; The Population Situation in the U. S. in 1975. Edited by Donald J. Bogue. Published by Scripps Foundation for Research in Population Problems (Miami University) and Population Research and Training Center (University of Chicago). 1957.

But other conditions will not remain the same. Daly has developed an economic framework for 1975 that points up the possibility of a 40 percent increase in real income per capita from 1956 to 1975. ^{13/} Such a rise in income would be likely to reduce the relative importance of home production of all food another percentage point, with further decline coming particularly in milk production for home use.

Historically, the level of home production has changed much more than urbanization and increased incomes would have led us to expect. Even tempering the rates of change in both food purchases and home production, further changes in rural food patterns, higher incomes, and greater degree of urbanization may in the next 15 to 20 years combine to cut to 2 percent the overall average relationship of home production to U. S. consumption at home. Such reduction would be likely to add around 5 percent per capita to the retail sales of food for home consumption.

Under these assumptions, home production of meat would be cut at least 50 percent from the level reported in the 1955 Survey of Household Food Consumption, and probably two-thirds. An addition of 8 pounds retail weight per capita to commercial demand for meat would be equivalent to 5 percent of average consumption in 1955. The outlook for home production of fruit and vegetables probably depends as much on the success of marketing agencies in maintaining quality of fresh produce as on the prospective changes in income and urbanization. If marketing agencies relax their efforts toward quality control, many suburban families will grow fruits and vegetables as a leisure time activity.

^{13/} Daly, Rex F. "Projections of United States Demand for Food and Fiber in 1975." Paper submitted for hearings on Policy for Commercial Agriculture, Joint Economic Committee of the Congress, Nov. 22, 1957.

